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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,403	04/13/2001	Akihiro Ohta	42252/DBP/A400	3647

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CHRISTIE, PARKER & HALE, LLP
350 WEST COLORADO BOULEVARD
SUITE 500
PASADENA, CA 91105

EXAMINER

AKHAVANNIK, HUSSEIN

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 05/19/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/834,403

Applicant(s)

OHTA ET AL.

Examiner

Hussein Akhavannik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 4-8 and 11-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,9 and 10 is/are rejected.
- 7) ☒ Claim(s) 2-3 and 9-10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Election/Restrictions

1. Claims 4-8 and 11-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species 2 to 10, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

Claim Objections

2. Claims 2 and 9 are objected to because of the following informalities:

Referring to claims 2 and 9, "outputting signal of power corresponding" should be changed to "outputting a power signal corresponding".

Appropriate correction is required.

Double Patenting

3. Claims 9 and 10 are objected to under 37 CFR 1.75 as being a substantial duplicate of claim 2 and 3, respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Wanielik et al (U.S. Patent No. 6,414,712).

Referring to claim 1,

- i. A radar is illustrated by Wanielik et al in figure 1 by the radar sensor 2.
- ii. An image acquisition unit is illustrated by Wanielik et al in figure 1 by the image sensor 4.
- iii. A processing unit for specifying an area of image recognition based on the data output from the radar and processing the image data from the image acquisition unit only for the specified area is illustrated by Wanielik et al in figure 1 by the selection device 8 and is explained in column 3, lines 15-25. Wanielik et al explains that the area specified for further processing is the solid angle sections in which the radar sensor detects echo signals.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wanielik et al in view of Raboisson et al (U.S. Patent No. 5,706,355).

Referring to claim 2, which is representative of claim 9,

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i. A radar for scanning a specified area and outputting a power signal corresponding to an object scanned is illustrated by Wanielik et al in figure 1 by the radar sensor 2.

Wanielik et al do not explicitly explain that the power of the radar is outputted, however, it is inherent that radar systems output power levels depending on echo levels detected (as explained by Wanielik et al in column 3, lines 19-20).

ii. An image acquisition unit for acquiring an image of the specified area is illustrated by Wanielik et al in figure 1 by the image sensor 4.

iii. A processing unit for specifying an area of image recognition based on the power of the signal output from the radar is illustrated by Wanielik et al in figure 1 by the selection device 8 and is explained in column 3, lines 15-25. Wanielik et al explains that the area specified for further processing is the solid angle sections in which the radar sensor detects echo signals (corresponding to power signals as explained in part i of this claim).

iv. Extracting the edge data from the image data output from the image acquisition unit only for the specified area and detecting a target based on the edge data is not explicitly explained by Wanielik et al. Wanielik et al do explain the further processing comprising detecting a target (such as an obstacle, a preceding vehicle, roadway edge or traffic signal) in column 3, lines 2-7. However, Wanielik et al do not explain detecting the target based on edge data extracted from the image data. Raboisson et al explain extracting significant edges in order to characterize a region imaged in column 5, lines 20-46. Raboisson et al explain this analysis is performed in order to detect targets including objects and vehicles coming into the limited safety zone in column 3, lines 33-

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38. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to extract edge data from image data and detect a target based on the edge data as explained by Raboisson et al in the target detection system of Wanielik et al because both systems are directed towards detecting and classifying hazards surrounding a vehicle using image information and the teaching of Raboisson et al provides a well-known and accurate method of target detection to the system of Wanielik et al.

8. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wanielik et al in view of Raboisson et al, and further in view of Holmes (U.S. Patent No. 5,430,450).

Referring to claim 3, which is representative of claim 10, the processing unit specifying an area having the power not less than a predetermined level as the image recognition area is not explicitly explained by Wanielik et al or Raboisson et al. However, Holmes explains detecting an object from the power level of a radar signal by thresholding the power level in column 2, lines 44-50. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to specify an area having the power not less than a predetermined level as the image recognition area as explained by Holmes in the target recognition system of Wanielik et al and Raboisson et al because false detections would be avoided, thereby increasing the accuracy of the object detection and recognition.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takubo (U.S. Patent No. 6,377,191) – To exhibit recognizing an object moving on the road by using a camera and a radar detector as explained in the abstract and illustrated in figure 2.

Rao et al (U.S. Patent No. 6,498,972) – To exhibit classifying an object using detections from a radar detector and plural cameras as illustrated in figures 1 and 7.

Lemelson et al (U.S. Patent No. 6,275,773) – To exhibit inputting radar information and TV camera information into a microprocessor for detecting hazards as illustrated in figure 3.

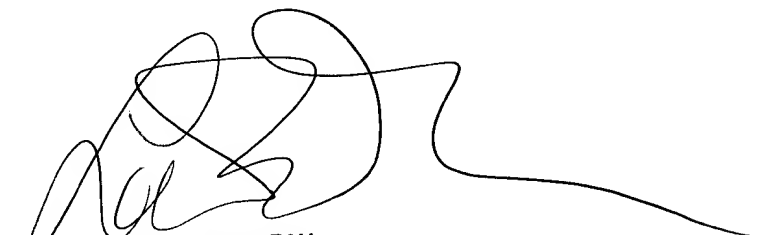
Dietrich et al (DE 3106100 A1) (English Abstract) – To exhibit using a radar to scan a given field for detection of an approaching object and identifying the object in a captured image as explained in the abstract.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein Akhavannik *HA*
May 13, 2004


LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600